

A circular inset photograph showing a close-up of several bright yellow flowers, likely marsh marigolds, growing in a wetland area with green foliage and water in the background.

THE BANNER WETLANDS

*Rediscover The Magic,
Colour And Wildness
Of Wetlands In Clare . . .*





THE BANNER WETLANDS

Blanket Bogs

Raised Bogs

Fen

Heath

Wet Grassland

Swamps

Marsh

Lakes

Turloughs

Rivers

Springs

Wet Woodland

Constructed Wetlands

Have You Ever?

Chased butterflies through a rushy field

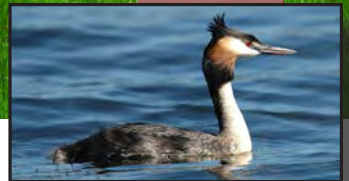
Watched a little grebe's disappearing act on a lake

Looked for frogs in a marsh

Picked wild rosemary in a bog

If the answer is Yes, then you've experienced some of the magic and colour of wetlands.

If the answer is No, then you're missing out!



So what are Wetlands?

Lands which are wet? Well, yes actually. As the name suggests, wetlands are areas where water is the most important environmental factor.

A wetland is an area that has been wet for long enough to allow specially adapted plants and animals to establish.



Great
Grebe,
Dropwort



THE BANNER WETLANDS

The Banner Wetlands

With 120 miles of coastline and a number of estuaries (where a river meets the sea), Clare contains fresh water, salt water and even brackish water wetlands (mixture of fresh and salt water).

Some of the wetlands found in Clare are very rare elsewhere in Ireland and the rest of the World.

In fact, Clare is home to some of the finest examples of calcareous fens, springs and turloughs found in Ireland and Northwest Europe.



Did You Know:
In Clare, we have around 23,440ha of wetlands mapped (thats 7.4% of land cover), but theres alot more still to do!!!



Above: Marsh



Left;
Constructed
Wetland

Opposite page:
Water Mint,
River, Turlough



**Did You
Know:**

Many different wetlands can occur together to form a unique mosaic or mix!!!

Thanks to our wet climate (1000 to 1400mm of rainfall), topography (lie of the land), geology (rocks), hydrology (water), and soil types, Clare is home to an impressive 34 different wetland types, with 22 of these being of international importance!!!

The banner freshwater wetlands can be grouped into:

Peatlands & Heath,

Wet Grassland, Swamps & Marsh,

Lakes, Turloughs, Rivers & Springs.

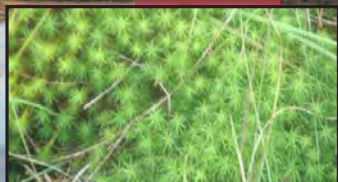
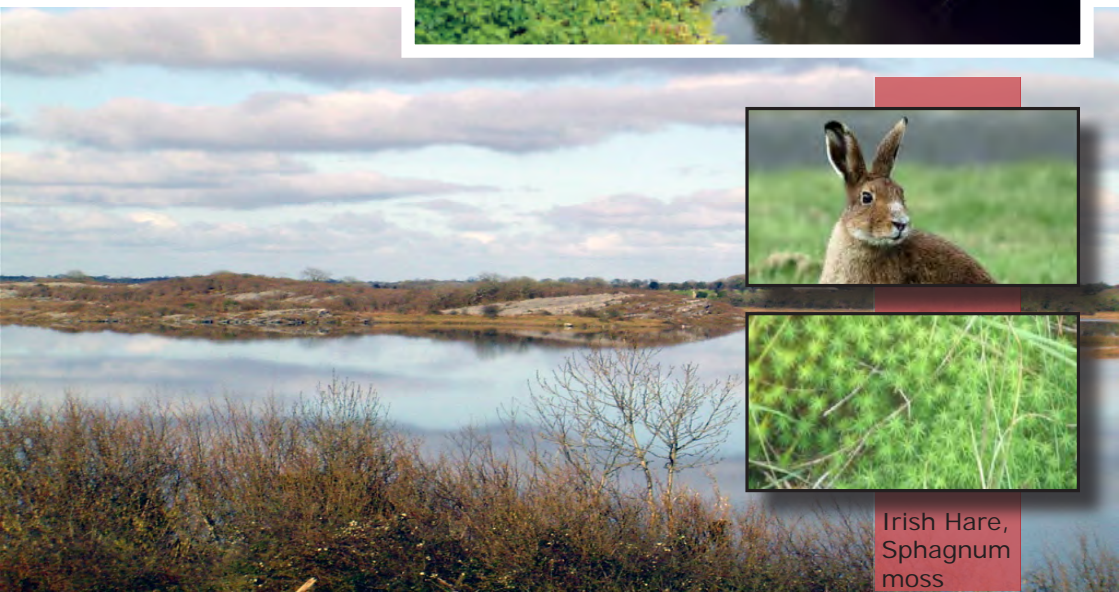
Wet Woodland

Constructed Wetlands



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Did You Know:
Despite their
importance, only
half of freshwater
wetlands in Clare
are protected!!!



Irish Hare,
Sphagnum
moss

WETLANDS: WORKING FOR US



Did You Know:
Bogs are natural museums, preserving items such as pollen, butter, jewellery and human remains which help us discover how our ancestors lived thousands of years ago!!!

Wetlands improve **Water quality** by removing pollutants and dirt from the water.

Wetlands store large amounts of water during heavy rainfall, acting like a natural sponge, which helps reduce the risk of **Flooding** downstream.

Wetlands act as carbon sinks. This means that wetlands hold onto carbon instead of releasing it into the atmosphere, and so help reduce **Climate Change**.

Groundwater is a valuable freshwater resource which is threatened by surface runoff and pollution. Wetlands help protect this resource by removing pollutants from the runoff before it reaches the **Groundwater**.



Above: Bog Cotton

Right: Waterfall

Below: Fen



Did You Know:
Bogs and Fens store up to 30% of the world's soil carbon, which is three times more than tropical rainforests!!!

Wetlands provide important **Open Spaces** and create wonderful opportunities for recreation, tourism, fishing, boating, bird watching, photography and art.

Wetlands are an important part of our **Cultural Heritage**, being central to important local traditions, religious beliefs, and act as a source of inspiration.

Wetlands provide a variety of **Habitats** and are home to many **Species** of birds, mammals, amphibians, fish, invertebrates and plants. They are particularly important for many migratory birds (birds which fly to other countries for part of the year).



Right:
Heath

Below:
Beautiful
Demoiselle
Damselfly



Heather,
Moorhen

PEATLANDS & HEATH



Did You Know:
peat may be fen peat
or bog peat depending
on the source of water
in which it formed



Hen Harrier

Peatlands & Heath

Peatlands cover almost one-sixth of the land area of Ireland, being second only to Finland in Europe.

Irish peatlands are in much better condition than those in other countries and so are internationally important.

The Science Bit:

Peat forms from dead plant matter in waterlogged conditions, which cannot break down due to a lack of oxygen.

In Clare, the majority of our peatlands are blanket bog, but we also have fens, raised bog, cutover bog and eroding blanket bog.



Blanket Bogs

The Science Bit: Forms along the contours or slopes of the land and can be broken into upland- and lowland-blanket bog, with the dividing line being around 150 metres above sea level.

Life in a Blanket Bog: A more grassy vegetation than raised bogs, with black-bog rush, purple moor grass and sedges dominating, and home to the Irish hare, red grouse, curlew, golden plover and hen harrier.

BLANKET BOGS



Curlew,
Irish Hare

Find it in Clare: Lough Atorick bog in the Slieve Aughty Mountains (upland blanket bog), Oysterman's Marsh (lowland blanket bog)

FENS



Fen violet



Did You Know:
Twenty-five of Ireland's
most endangered rare
plants and animals
survive only on fens!!!

Fens

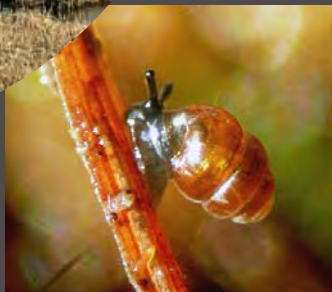
Fens can be considered
as 'bogs in the making'
as they often go on to
become raised bogs.

The Science Bit:

Develop in natural
depressions or hollows
in the landscape where
there is an available
source of ground or
surface water such as
lake basins, flood plains
or river valleys.

Life in a Fen:

An extensive carpet of
sedges, rushes and brown
mosses, home to snipe,
sedgewartbler, curlew,
woodcock, damselflies,
dragonflies and a number
of rare snails.



Whorl Snail,
Sedge



Find it in Clare: Near Ballycullinan Lake
(rich fen) and near Lough Acrow bogs (poor
fen).

Raised Bogs

The name comes from their raised dome shape which develops as the bog grows upward.

The Science Bit: Develop when fen peat builds up too high and loses contact with ground or surface water. Rain is then the only source of water in raised bogs (this makes the bog acidic).

Life in a Raised Bog: The surface of raised bog is characterised by raised moss hummocks surrounded by lower areas called 'lawns', while the acidic and nutrient poor conditions are ideal for heather, bog cotton and mosses such as sphagnum.

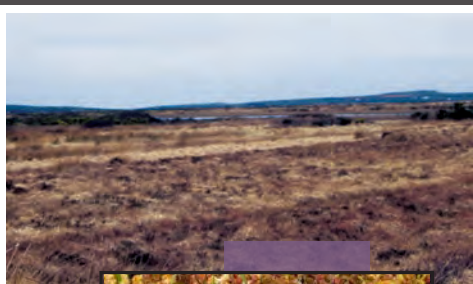


Find it in Clare: Tullagher Bog near Kilkee
(most southern raised bog in Ireland)



Did You Know:

Sphagnum moss is particularly important in raised bogs as it acts like a sponge soaking up water, and then releasing hydrogen ions which makes the bog even more acidic!!!



Sphagnum
moss,
Heather



HEATH

Heath

The Science Bit:

Created from thousands of years of human clearance of natural forest and scrub vegetation and by traditional grazing and burning on infertile acidic soils.

Life in a Heath:

Abundant with heathers and dwarf shrubs, and are home to a huge array of invertebrates including almost half of all dragonfly species that occur in Ireland, such as the large red damselfly, common blue damselfly, hairy dragonfly, common hawk, four spotted chaser and the ruddy darter!

Right:
Common Blue
Damselfly



Bottom Right:
Common Darter



Above:
Black tailed Skimmer



Find it in Clare: At Slieve Bearnagh Bog (dry heath), Moneen Mountain (montane heath) and Ballyteige Nature Reserve (wet heath).

Cutover and Eroding Bogs

The Science Bit: Found where the original peat has been reduced due to either peat cutting or erosion. In cutover bogs, due to the different methods and extent of peat removal, a mixture of habitats can result. Eroding Bogs are characterized by networks of channels and gullies which have cut through the peat to below the rooting level of plants, leaving open tracts of bare peat.

Life in a Cutover Bog: Woodland, scrub, heath, fen, reclaimed farmland and grassland habitats are all potential colonisers of cutover bog, depending on the local geology, hydrology, soil type and depth, and the level of disturbance to the ground.

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Did You Know:
Any small blocks of
peat that remain
in an eroding bog
are known as 'Peat
Hags'!!!

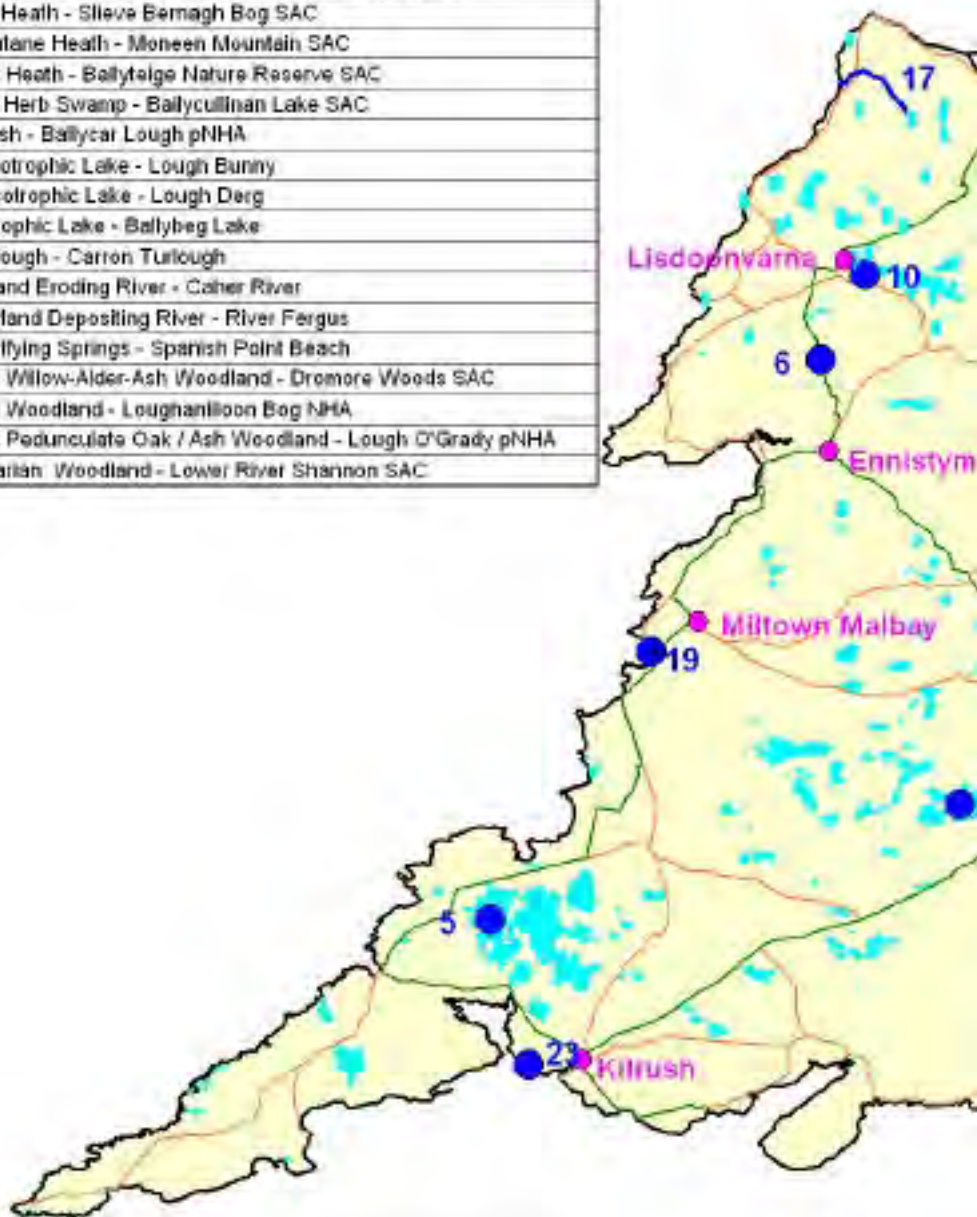
CUTOVER AND ERODING BOGS



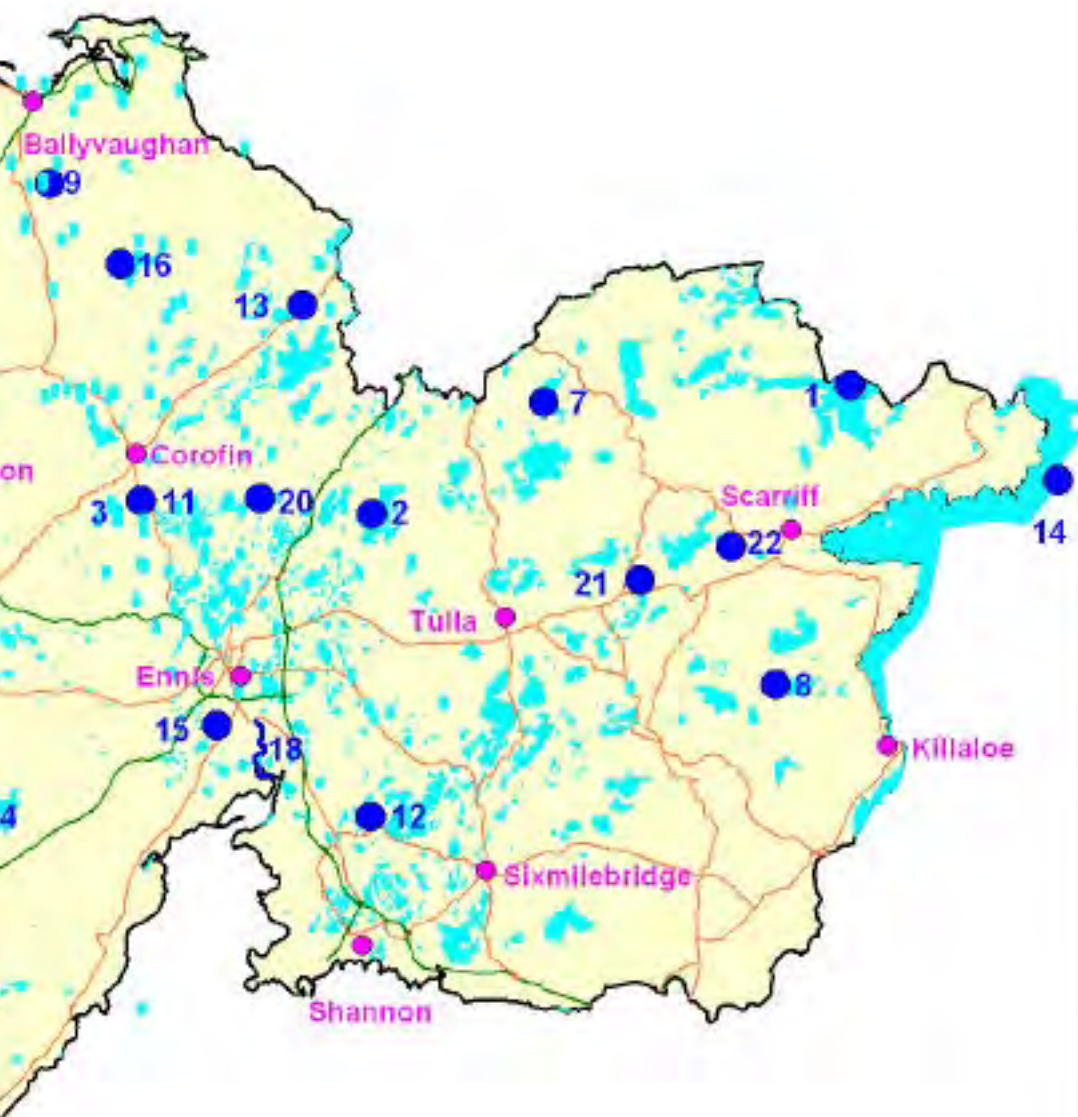
Find it in Clare: Aughiska More near
Lisdoonvarna (cutover bog) and Maghera Mountain
Bogs (eroding blanket bogs)

Eroding
Bog

ID	Designation
1	Upland Blanket Bog - Lough Aterick Bog SAC
2	Lowland Blanket Bog - Oysterman's Marsh NHA
3	Rich Fen - Ballycullinan Lake SAC
4	Poor Fen - Lough Acrow Bogs NHA
5	Raised Bog - Tullaheer Bog SAC
6	Cutover Bog - Aughiska More
7	Eroding Blanket Bog - Maghera Mountain Bogs NHA
8	Dry Heath - Slieve Bernagh Bog SAC
9	Montane Heath - Moneen Mountain SAC
10	Wet Heath - Ballyteige Nature Reserve SAC
11	Tall Herb Swamp - Ballycullinan Lake SAC
12	Marsh - Ballycar Lough pHNA
13	Oligotrophic Lake - Lough Bunny
14	Mesotrophic Lake - Lough Derg
15	Eutrophic Lake - Ballybeg Lake
16	Turlough - Carron Turlough
17	Upland Eroding River - Caher River
18	Lowland Depositing River - River Fergus
19	Petrifying Springs - Spanish Point Beach
20	Wet Willow-Alder-Ash Woodland - Dromore Woods SAC
21	Bog Woodland - Loughanliloon Bog NHA
22	Wet Pedunculate Oak / Ash Woodland - Lough O'Grady pHNA
23	Riparian Woodland - Lower River Shannon SAC



THE BANNER WETLANDS



WET GRASSLAND OR 'RUSHY' FIELDS

Wet grassland or 'rushy' fields

The Science Bit:

Grasslands that occur on waterlogged or poorly drained soils that are often used for grazing, and which contain a rich variety of herbs and weeds, which are more tolerant of the wet conditions.

Life in Wet Grassland:

Typical species include rushes, sedges and plants such as meadowsweet, cuckoo flower, silverweed and devils-bit scabious, and are important for ground nesting birds, such as the skylark and meadow pipit



Red Shank,



Silverweed



Find it in Clare: Ballyteige Nature Reserve

Swamps

The Science Bit: Usually located between open water and dry land, such as around lakes or on the banks of slow flowing rivers, and are found in standing water for a large part of the year.

Life in a Swamp: Important habitats for otter, sedge warbler, water rail, moorhen and other water fowl. Swamps are described by their vegetation, namely Reed and Large Sedge Swamps or Tall Herb Swamps which includes flowering plants such as lesser water-parsnip, water forget-me-not, yellow flag and hemp-agrimony.



Water Forget-me-not



SWAMPS



Otter,
Water-
Parsnip



Find it in Clare: On the banks of the River Fergus (reed and large sedge swamp) and Ballycullinan Lake (tall herb swamp).



MARSH

Marsh

The Science Bit:

Usually found near lake shores, slow flowing rivers, in places where mineral or shallow peaty soils are waterlogged or where the water table is close to the ground level for most of the year.

Life in a Marsh:

Contains more flowers tolerant of wet conditions than wet grassland, such as marsh marigold, water mint and purple loosestrife, and are important for insects such as butterflies and waders such as Snipe.



Rushes,
Marsh Fritillary



Find it in Clare: Near Ballycar Lake

Lakes

The Science Bit: Can be oligotrophic (low level of nutrients), mesotrophic (moderate level of nutrients) or eutrophic (high level of nutrients). They are measured by the level of phosphorous and phytoplankton (microscopic plants) in the water.

Life in a Lake: Essential for freshwater fish and aquatic life, and contain plants both above and below the surface such as pondweeds, bogbean, mosses, quillworts, reeds, rushes and sedges, and are important for invertebrates and birds such as the little grebe, shoveler, pochard and whooper swan.



Did You Know:

Where the level of nutrients is too high, it can lead to an algal bloom, which gives the water a green colour and is harmful to aquatic life, as well as to animals and humans that drink from such water!!!



Find it in Clare: Lough Buny (oligotrophic), Lough Derg (mesotrophic) and Ballybeg Lake (eutrophic).

Little
Grebe,
Mute Swan



RIVERS

Rivers

The Science Bit:

There are two main types of rivers, upland eroding rivers (characterised by steep slopes, rapid water flow and rocky or pebbly riverbeds with little vegetation) and lowland depositing rivers (generally found on flat land, slow water flow and usually wider and deeper than upland eroding rivers).

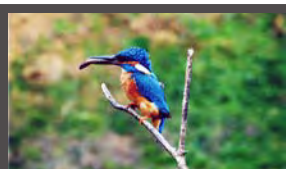
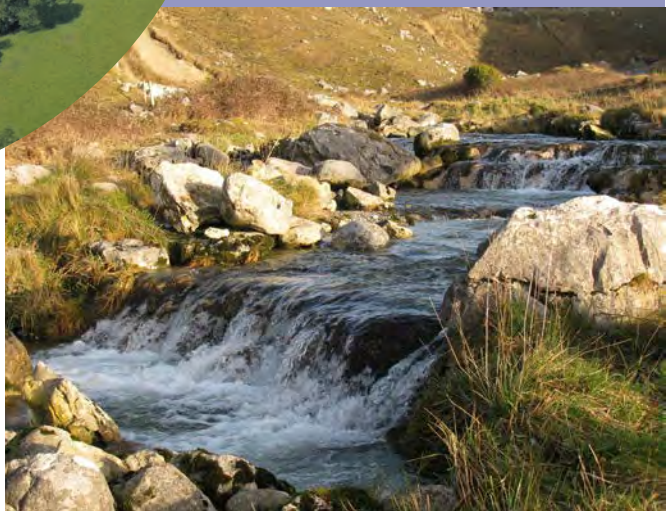
Life in a River:

Both floating and standing vegetation may be present in rivers, including reeds, rushes, yellow flags, water lilies and pondweeds.



Did You Know:

The types of plants and animals that inhabit rivers depend on a number of factors including the force of water flow, underlying geology, channel size and depth, nutrient status, water quality and the amount of light and shade it receives!!!



Yellow Flag,
Kingfisher,
Salmon

Find it in Clare: The Caher River (upland eroding river) and the River Fergus (lowland depositing river)

Turloughs

The Science Bit: Seasonal lakes which occupy hollows or depressions in limestone areas such as the Burren. As the water table rises, the water makes a rapid exit to the surface through 'swallow holes', and similarly disappears when the water table falls again.

Life in a Turlough: Bands of vegetation form rings around the margins of the turlough depending on the plants tolerance to flooding. Turlough violet, dog violet, shrubby cinquefoil and silverweed are common, while black turlough moss marks the highest water level. Important for invertebrates such as beetles and damselflies, wintering wildfowl such as wigeon, teal, shoveler and whooper swan, and waders such as snipe, dunlin and lapwing in Summer.

Did You Know:

Turloughs are virtually unique to Ireland!!!

Did You Know:

Turloughs are home to Ireland's rarest damselfly, the Scarce Emerald.

Did You Know:

Weathering or erosion of the rock below the ground has created vast underground caves and passages which act like natural pipe-work for water!!!



Lapwing,
Snipe

TURLOUGHs



SPRINGS

Springs

The Science Bit:

Areas where the groundwater reaches the surface. They are generally quite small in size, covering at most a few square metres in area. They can be calcareous or non-calcareous depending on the underlying rock type.

Life in a Spring:

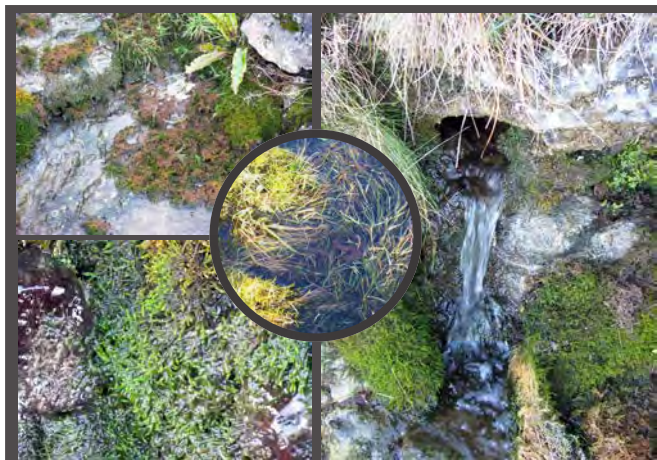
Generally mosses are found in abundance around springs, and they support a variety of unusual invertebrates.

Did You Know:

Springs are important sources of drinking water for humans, livestock and wildlife, however, if not carefully managed, they can rapidly pollute the entire body of water underground!!!



Did You Know:
'Petrifying' or stone-forming springs occur in some limestone areas, such as the Burren, where the groundwater is rich in calcium and tufa (too-fa) formations occur; Tufa is limestone which is formed when the air and water react with each other, and calcium coats the stones!!!



Mosses, Ferns and Grasses colonise springs

Find it in Clare: On the cliffs above Spanish Point beach.

Wet Woodlands

The Science Bit: Found growing in wet areas or bogs, and can be categorized depending on the types of trees in the canopy or location, e.g. Riparian woodland is one which grows along river banks.

Life in a Wet Woodland: Important for many animals and birds such as the Irish jay, goldcrests, treecreepers, tits, warblers, finches, bats, pine marten, red squirrel and pygmy shrew. A deep carpet of Sphagnum moss is characteristic in bog woodlands.



Did You Know:

The most common type of wet woodland in Clare is wet willow-alder-ash woodland, and is often referred to as 'Carr'!!!



Find it in Clare: Dromore woods and lough (wet willow-alder-ash woodland), Loughanilloon bog (bog woodland), near Lough O'Grady (wet pedunculate oak-ash woodland) and along the Lower River Shannon (riparian woodland).

Pine Marten,
Red Squirrel



CONSTRUCTED WETLANDS



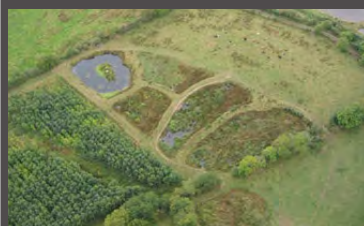
Did You Know:
The vegetation in constructed wetlands provides a Surface on which microorganisms can grow and break down the organic matter in waste water or sewage!!!

Constructed wetlands

The Science Bit:
Artificially created swamps and marshes, designed specifically for the discharge of waste water, sewage or storm-water, but which also act as important habitats for wildlife.

Life in a Constructed Wetland:

The species planted are those most commonly found in natural swamps and marshes, and so provide habitats for the same animals, birds and insects also.



Dirty water flows into the reed bed system and clean water comes out at the other end

Reed bed filtration systems can be used to treat waste water from your house



Find it in Clare: Attenuation ponds reduce the pollution in road surface run-off along the new Ennis bypass, while different constructed wetlands are becoming increasingly popular for waste water treatment in private households and farms.

Wetlands: What can we do?

Most Irish wetlands have been influenced by people at some stage in the past, whether through drainage, burning, peat removal, conifer plantation, overgrazing or reclamation.

Infilling, Illegal Dumping and Invasive Species are the biggest threats to wetlands today.

These can affect the ability of wetlands to hold water leading to flooding elsewhere, or pollution of surface and groundwater.

Report any dumping to Clare County Council on Freephone 1800 606 706.



Drainage Ditch



Illegal Dumping



Large
scale Peat
Removal



Acknowledgements:

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Forward Planning, Clare County Council

SLD Design

Above: White Fronted Goose

Right: Turlough

Below: Common Frog,
Burnet Moth

Opposite: Whooper Swans, yellow loosertriffe, Turlough, Common Blue Damsel fly

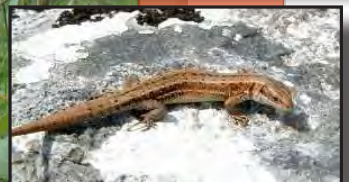
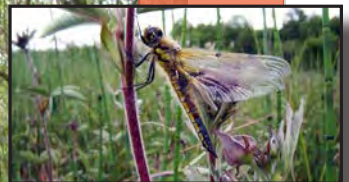
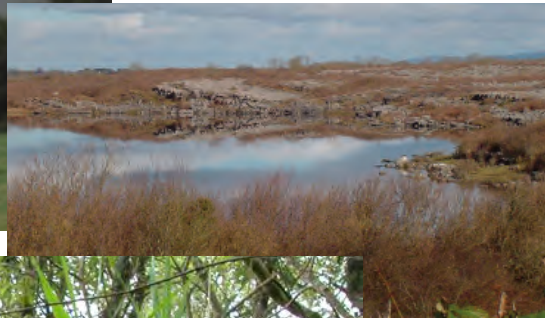


Sources of Information:

County Clare Wetlands Survey 2008

The Living Farmland:
Living with nature in County Clare

IPCC Information Sheets



Dragonfly,
Common
lizard

... Well, What are you waiting for?

This is an action under the Clare Heritage Plan
and Clare Local Biodiversity Action Plan



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Designed by Shirley Lazenby